

Amendments to the Claims:

1.-34. (Cancelled)

35. (Previously Presented) A method of treating human disc diseases comprising the steps of:

- a) providing a minced human intervertebral disc cells;
- b) culturing said minced human intervertebral cells under conditions to propagate and form a monolayer of human intervertebral disc cells;
- c) isolating the human intervertebral disc cells from said monolayer;
- d) seeding said isolated cells in a carrier such that the isolated cells are dispersed and distributed in the carrier;
- e) culturing said dispersed and distributed cells in said; and
- f) implanting said carrier into a target disc area needing treatment in a human patient.

36. (Cancelled)

37. (Previously Presented) The method according to of Claim 35 wherein said carrier is a member of the group consisting of alginate, agarose, collagen, and mixtures thereof.

38. (Previously Presented) The method according to of Claim 35 wherein at least a portion of said propagated human intervertebral disc cells have re-expressed extracellular matrix materials.

39. (Currently Amended) A method of treating a diseased or injured ~~invertebral~~ intervertebral disc ~~having nucleus and annulus regions~~, comprising the steps of:  
obtaining live intervertebral human disc cells;  
culturing said intervertebral disc cells under conditions to propagate cultured intervertebral disc ~~tissue~~ cells; and

implanting said cultured intervertebral disc ~~tissue~~ cells into a target disc area needing treatment in a human patient.

40. (Previously Presented) The method according to Claim 39, wherein said live intervertebral disc cells are obtained from said human patient to be treated.

41. (Currently Amended) The method according to Claim 39, further comprising the step of mincing said live intervertebral disc ~~tissue~~ cells to obtain an explant prior to culturing.

42. (Currently Amended) The method according to Claim 39, wherein said cultured human intervertebral disc ~~tissue~~ is cells are combined with a carrier material.

43. (Previously Presented) The method according to Claim 42, wherein said carrier material is selected from the group consisting of alginate, agarose, collagen, and mixtures thereof.

44. (Previously Presented) The method according to Claim 41, wherein said explant is cultured in the presence of a material selected from the group consisting of fetal calf serum and fetal bovine serum.

45. (Previously Presented) The method according to Claim 41, wherein said explant is cultured in the presence of a material selected from the group consisting of growth factor beta (TGF- $\beta$ ), insulin-like growth factor I, insulin-like growth factor II, basic fibroblast growth factor, acidic fibroblast growth factor, platelet-derived growth factor, insulin, human recombinant bone morphogenetic protein 2, and vitamin D.

46. (Currently Amended) The method according to Claim 39, wherein said implanting step comprises:

debriding diseased or injured disc ~~tissue~~ cells in said patient; and  
then delivering said cultured human intervertebral disc cells into the area of debridement.

47. (Currently Amended) The method of Claim 41, further including the steps of:

- (a) culturing said explant under conditions to propagate a monolayer of human intervertebral disc ~~tissue~~ cells, wherein said disc ~~tissue~~ cells can be isolated and further propagated upon passaging;
- (b) isolating said human intervertebral disc ~~tissue~~ cells from said monolayer to form isolated disc ~~tissue~~ cells;
- (c) distributing said isolated human intervertebral disc ~~tissue~~ cells in a carrier material such that said isolated disc ~~tissue-forms~~ cells form a three-dimensional structure; and
- (d) culturing said human intervertebral ~~tissue~~ cells in said three-dimensional structure.

48. (Previously Presented) The method according to Claim 47, wherein said live intervertebral disc cells are obtained from said human patient to be treated.

49. (Currently Amended) The method according to Claim 47, wherein said ~~cultured~~ monolayer of human intervertebral disc ~~tissue~~ cells is combined with a carrier material.

50. (Previously Presented) The method according to Claim 49, wherein said carrier material is selected from the group consisting of alginate, agarose, collagen, and mixtures thereof.

51. (Previously Presented) The method according to Claim 47, wherein said explant is cultured in the presence of a material selected from the group consisting of fetal calf serum and fetal bovine serum.

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52-58. (Cancelled)